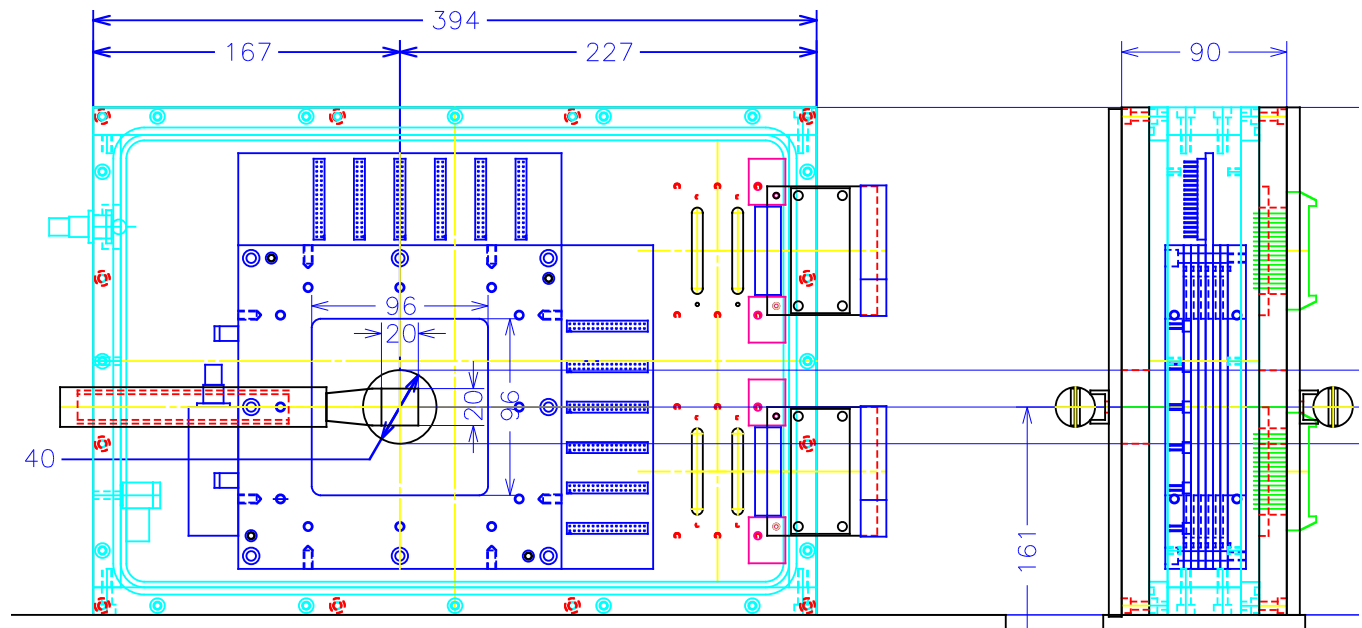


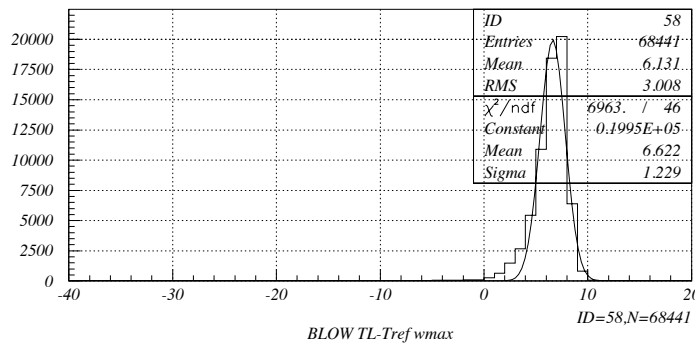
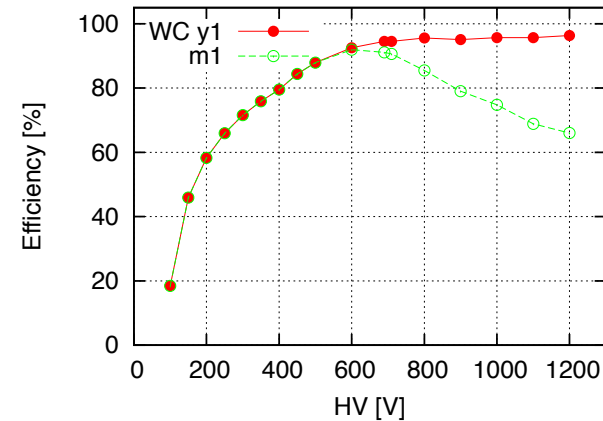
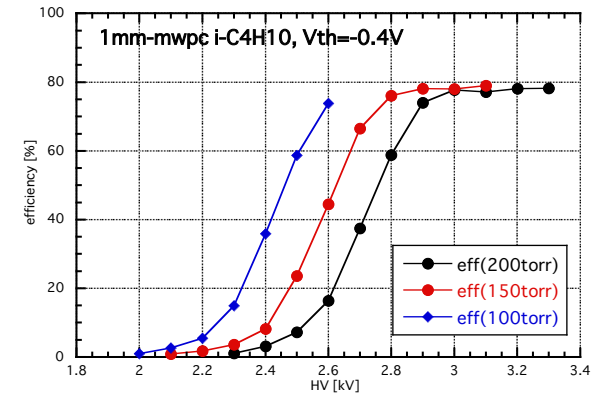
# [1-1] 1mm-spacing MWPC -1

- Candidate for position detectors at F3 under "high"-rate due to its narrow spacing
- utilize existing MWPC, 4 sets
  - effective area : 96mm x 96mm
  - anode : pitch=1mm, 16 $\mu$ m $\phi$  Au-W/Re wire, half gap= 4mm
  - configuration : W-K-Ax-K-Ay-K-W
  - #readout channels : 96ch (x), 96ch(y)
    - difficult to read all channels in a focal plane vacuum chamber
    - reduce #readout channel : 32ch(x)+32ch(y) may be enough at F3
- Beam test at F11 : during Sumikama beam time, Oct-2014
  - 1mm MWPC tested at low pressure for the first time
  - read 32ch(Y) via LVDS/ECL & LRS3377 (2nsec/ch)
  - X : one dead channel  
in the middle



# [1-2] 1mm-spacing MWPC

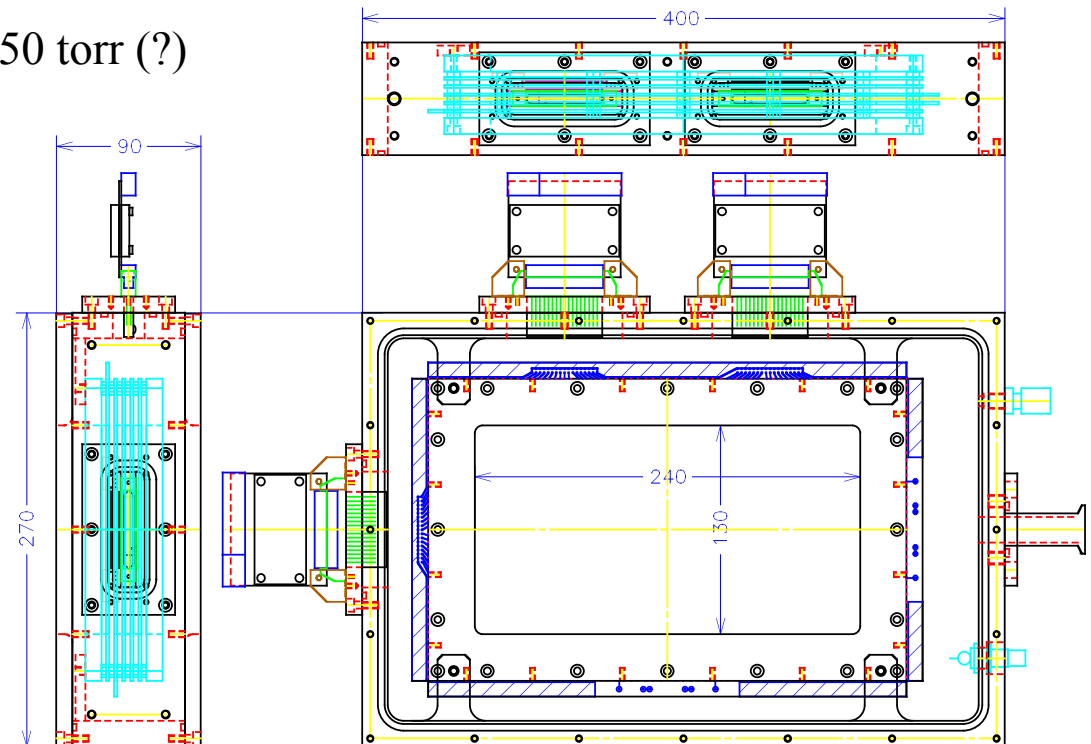
- for MIP ( $\beta$ )
  - HV plateau at  $P > 150$  torr
  - ( $\epsilon_{\max} \sim 80\%$  mainly due to the size of trigger counters)
- for RI beam @  $E \sim 30$  MeV/A
  - gas : i-C<sub>4</sub>H<sub>10</sub> P= 100 torr
  - HV plateau for  $Z=36, A=86$ 
    - ( $\epsilon_{\max} \sim 95\%$  due to one dead channel)
    - slow rise compared to 2mm MWPC (?)
- drift time distribution (w largest width)
  - width :  $\sigma \sim 2.4$  nsec , better than 2mm MWPC



## [2-1] Cathode chamber

- Position detectors at F5 & F7
  - for low-Z, moderate rate,
  - effective area : 240mm(H) x 130mm(V) (130mm x 130mm for F7)
  - configuration : Kx-Ay-Kc-Ax-Ky
  - cathode : strip pitch= 8mm, material: 4 $\mu\text{m}^t$  Al-PP
  - anode : 20 $\mu\text{m}\phi$ , drift distance=5mm, half gap= 5.0(~ 5.5)mm
  - #readout channels : 32ch(H)+16ch(V)
    - information : cathode charge (width) + drift time
    - ASD in vacuum
  - gas : i-C<sub>4</sub>H<sub>10</sub>, 150 torr (MIP, z=1) ~ 50 torr (?)
  - utilize LRS3377 via LVDS/ECL

- Plan : make 2 sets in FY2014
- ? lists
  - resolution
  - calibration procedure
  - shaping time : 16 or 80 nsec
  - ageing effect
  - lifetime at high rate



# [2-2] Cathode chamber

